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Ministry of Health
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Policy & Procedure (P&P)

Policy Title :

INTRA UTERINE TESTING AND BLOOD TRANSFUSION

Department	Index No.	Scope
Laboratory & Blood Bank	LAB-099	All Blood Bank Staff , all medical staff
Issue Date	Revision NO	Effective Date
1441/7/14	NEW	1441/7/14
Review Due Date	Related Standard NO.	Page Number#
1443/7/14	CBAHI (66)	Page 1 of 4

01. Policy:

The blood bank has a process how to test and to select the suitable units of blood for the fetus.

02. Definition :

N.A

03. Purpose :

To provide a safe and compatible blood to the fetus.

04. Procedure :

INTRA-UTERINE TESTING AND BLOOD TRANSFUSION

The most common indications for intrauterine transfusion (IUT) are red cells for : prevention and treatment of fetal anemia due to hemolytic disease of the fetus and newborn (HDFN) or parvovirus infection and platelets for neonatal allo immune thrombocytopenia (NAIT).

PATIENT SELECTION

The gynecology physician considers pregnancies with severe fetal anemia at 18 to 35 weeks of gestation optimal candidates for IUT. He obtains fetal blood via percutaneous umbilical blood sampling or hematocrit/hemoglobin determination when the fetal middle cerebral artery peak systolic velocity is greater than 1.50 multiples of the median and perform the first IUT if fetal hemoglobin is two standard deviations below the mean value for gestational age.

Intervention at this moderately reduced hemoglobin level results in a better fetal outcome than waiting until



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Ministry of Health

مستشفى القنفذة العام

development of severe anemia (hemoglobin level more than 7 g/dL below the normal mean for gestational age or hydrops (actual hemoglobin level <5 g/dL).

A hematocrit less than 30 percent can also be used as the threshold for fetal transfusion

The procedure is generally limited to pregnancies between 18 and 35 weeks of gestation because before 18 weeks the small size of the relevant anatomic structures causes technical challenges and after 35 weeks IUT is considered riskier than delivery followed by postnatal transfusion therapy

BLOOD PREPARATION

Red blood cells (RBCs) used for IUT should undergo the same testing that occurs for any red cell donor unit. The units are cross-matched using an Indirect antiglobulin test with maternal blood to reduce the risk of sensitization to new red cell antigens

Additional requirement specific to IUT include:

- donor units are type O Rh D negative in the case of RhD allo-immunisation.
- Type specific blood crossmatched and Kell negative and red cell antigen negative for maternal alloantibodies to the pregnant patient is used in the case of allo-immunisation to other red cell antigens.
- Some centers undertake an extended cross-match based on the red cell phenotype of the pregnant patient.
- Donor units negative for antibody to CMV are typically chosen
- Donor units are tested and should be negative for hemoglobin S
- The donation should be relatively fresh < 7 days of age
- AABB standards require that the red cell units for IUT undergo irradiation with 25 Gy of gamma irradiation to prevent a graft versus host disease.
- Leukodepletion should be routinely performed and reduces the CMV risk.
- Units are washed and tightly packed to a final hematocrite of 75 to 85 % to reduce the volume administered to the fetus
- The component is warmed to 37°C immediately before transfusion

CHOOSING A FETAL ACCESS SITE

Potential fetal access sites include the umbilical vein, peritoneal cavity, umbilical artery and heart.

CALCULATING TRANSFUSION VOLUME

- The volume of blood transfusion for IUT depends upon the initial fetal hematocrite, size of the fetus, the hematocrite of the transfused RBCs and the target Hematocrite



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05. Responsibilities :

All Blood Bank Staff of Al-Qunfudah General Hospital.

06. Equipment & Forms

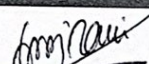
07. Attachment :

N/A

08. Reference

Technical Manual of the American Association of Blood Banks, 18 th edition

Preparation , Reviewing & Approval Box

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